

Atmospheric Re-entry Sensor Array for Temperature and Pressure

Completed Technology Project (2014 - 2015)



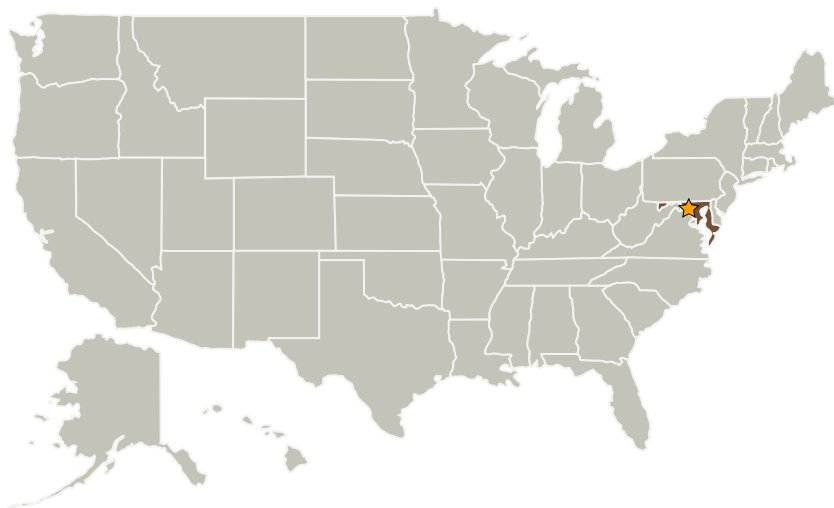
Project Introduction

Utilizing MEMS technology, we will be able to fabricate smaller sensors that are more apt to withstand the harsh environment of the re-entry process. Therefore, sensors can be **reused** if necessary. Material stability during descent would allow MARSA to accurately sense pressures. Moreover, MARSA can be reused for multiple re-entries just as SpaceX does with the Dragon Spacecraft's heat-shield on SpaceX's Dragon.

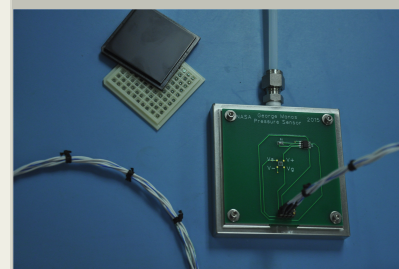
Anticipated Benefits

Development of MARSA will further Goddard's MEMS capabilities and increase Goddard's growing library of MEMS devices. For example, the sensors used for MARSA could be integrated for other microfluidic applications such as lab-on-a-chip analytical instruments. All microfluidic devices have a need to know what the pressures and temperatures are within the device.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Goddard Space Flight Center (GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland



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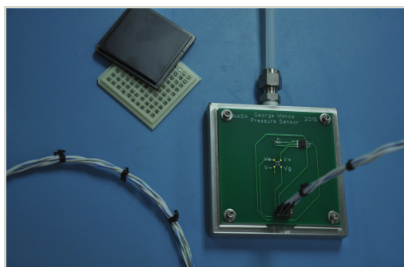
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Primary U.S. Work Locations

Maryland

Images



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(<https://techport.nasa.gov/image/19347>)

Links

NTR 1438347427

(no url provided)

Project Website:

<http://sciences.gsfc.nasa.gov/sed/>

Organizational Responsibility

Responsible Mission Directorate:

Mission Support Directorate (MSD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Center Independent Research & Development: GSFC IRAD

Project Management

Program Manager:

Peter M Hughes

Project Manager:

Terry Doiron

Principal Investigator:

George Manos

Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.3 In-Situ Instruments and Sensors
 - └ TX08.3.4 Environment Sensors